

## **DEFINITIONS OF CREATIVITY**

“...based on the production of ideas or products that are new, original, and satisfying to the individual or someone else at some point in time.”

**Renzulli**

“Creative thinking requires new combinations of formerly unassociated ideas.”

**Mednick**

“Creative power is the ability to visualize, to foresee, and to generate ideas.”

**Osborne**

“Creativity is a combination of the flexibility, originality, and sensitivity to ideas which enables the learner to break away from usual sequences of thought into different and productive sequences, the result of which gives satisfaction to himself and possibly to others.”

**Jones** (used by Callahan)

“The creative process is the production of novel ideas or products as a result of the interaction between individuals and their environments.”

**Rogers**

“Secondary creativity is the type of creativity that results when one person works with and ‘stands on the shoulders’ of others and consciously proceeds cautiously to conclusions. Primary creativity is the creativeness that is the heritage of every human being and springs forth from the unconscious.”

**Maslow**

“The creative process is the process of change, of development, of evolution, in the organization of subjective life.”

**Ghiselen**

## **THINKING ABOUT CREATIVE THINKING**

What is creative thinking?

Are there degrees of creative thinking?  
If so, what do you think they are?

Can everyone think creatively?

What keeps us from thinking  
creatively?

Can creative thinking be taught?

What influences our creative thinking?



# **THE FOUR BASIC CREATIVE THINKING SKILLS**



## **FLUENCY**

producing a large number of ideas  
or responses

## **FLEXIBILITY**

changing ones way of thinking by producing  
alternative ideas or categories

## **ELABORATION**

expanding on a single idea by adding details, making  
changes, or making ideas more interesting or  
complex

## **ORIGINALITY**

producing unique or novel ideas and responses that  
are new to oneself

# BRAINSTORMING

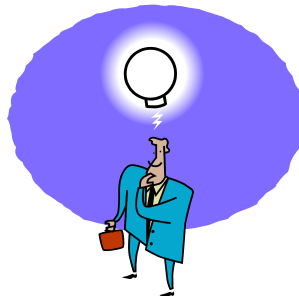
## RULES:

1. Quantity of ideas is initially the goal.
2. Criticism and evaluation are deferred.
3. Wild, imaginative ideas are acceptable.
4. Hitchhiking on others' ideas is encouraged.
5. All ideas are written down or recorded for future evaluation.
6. After all ideas are generated, evaluation against appropriate criteria takes place. Criteria may be student or teacher generated.
7. Students learn to contribute ideas succinctly.
8. Students learn to give each participant a chance to present ideas.

**An excellent brainstorming resource on-line can be found at the following address: <http://www.brainstorming.co.uk>**

## SOURCE:

Dr. John F. Feldhusen  
Gifted Education Resource Inst.  
Purdue Univ. SCC-G  
West Lafayette, IN 47906



## **SYNECTICS, also known as FORCED RELATIONSHIPS**

Developed by William Gordon, the strategy known as synectics attempts to produce creative solutions of problems through the use of metaphorical modes of thinking. The basic idea behind this technique is to make the familiar strange. To apply this strategy requires the individual to look at familiar objects/ideas/scenarios in a new perspective. The use of metaphors to accomplish this goal involves unique comparisons based on three particular techniques:

- **direct analogy** – This is a comparison of two situations or objects to look for similarities. How is popcorn like a flower? How is a sandwich like a crowd.

Synecotics also allows students to expand their thinking in a manner that is both creative and critical. Two sets of exercises follow that provide examples of questions that stretch student thinking.

### **SYNECTICS: ANALOGIES**

1. Which has more bounce – a book or a tennis ball? Why?
2. Which is louder – a sunrise or a sunset? Why?
3. Which is more fragile – a democracy or a monarchy. Why?
4. Which is more lasting – lost or found? Why?
5. Which is more restful – a circle or a line segment? Why?
6. Which is quieter - failure or embarrassment? Why?
7. Which is taller - science or math? Why?
8. Which is wider - writing or speech? Why?
9. Which is stronger - a doctor or the President? Why?
10. Which has more stretch - forgetfulness or helplessness? Why?

*Adapted from Lessons from the Hearthstone Traveler, by Bob Stanish*

## **Synecotic Questions for Algebra**

Which is more peaceful – an exponential graph or a quadratic graph? Why?

How are imaginary numbers like a grocery store?

Which function (linear, absolute value, quadratic, exponential, or cubic) best describes your personality? Why?

How is a polynomial fraction like Disney World?

Which country is most like a radical equation? Why?

Which is stronger – circles or exponential equations? Why?

How is the Internal Revenue Service ( the agency that collects taxes) like a rational equation?

**Function Flavors:** linear, absolute value, quadratic, exponential, logarithmic, radical, cubic, and circle.

If functions were ice cream flavors, which one would you pick to eat? Why? Or would you have multiple scoops of various flavors? Why?

How would you feel if you were a negative integer? Who would be your friends and why?

How is a matrix like an apartment building?

Which set of numbers are you most like? Why?

### **SYNECTICS: SOCIAL STUDIES**

1. Which country is like your family?
2. Which is more circular - communism or democracy?
3. Which has more stretch - Russia or the United States?
4. Which Eurasian country is most like a supreme pizza? A cheese pizza? Why?
5. Is Christianity more like McDonalds or Burger King? Why?
6. Which ecosystem is most like a duck? Why?
7. Which Eurasian country is most like a cavity? A wisdom tooth? Why?
8. Is Northern Europe more like gummy bears or chocolate? Why?
9. Which form of government are you most like? Why?
10. Which geographic feature is your bedroom most like? Why?

## CREATIVE QUESTIONING

**Ask open-ended questions:** Show the child a picture, then ask questions to stimulate and create a thinking atmosphere, for example: What are the people in the picture doing? What are the people saying? What would happen if ...?

**Ask children to use their senses:** Young children may often have their creative talents stretched by asking them to use their senses in an unusual way.

**Ask children about changes:** One way to help children to think more creatively is to ask them to change things to make them the way they would like them to be.

**Ask questions with lots of answers.** Any time you ask a child a question which requires a variety of answers, you are aiding creative thinking skills.

**Ask "What would happen if..." questions.** These questions are fun to ask and allow the children to really use their imaginations.

**Ask "In how many different ways..." questions.** These questions also extend a child's creative thinking.



## ACTIVITIES THAT FOSTER CREATIVE THINKING

**Pass the Word – Variation #1** - Students form a circle. The teacher chooses a category and asks students to think of four words that could fit into that category. Students hand the ball to the person on their right. As the ball is passed around the circle to a student, he/she calls out a word to fit the category. NOTE: the last person to receive the ball has the hardest job because he/she cannot repeat any words that have been previously spoken. The activity is timed to determine how long it takes the class to complete passing the ball around the circle. If a student has trouble voicing a word that has not already been called, the person on either side may help him/her.

**Variation #2** - A verbal student steps into the middle of the circle. He/she calls out as many words as possible to fit the category while the class acts as a timer, quickly passing the ball completely around the circle. Another student or the teacher counts the number of responses generated.

**Variation #3** - A student or the teacher controls the ball by standing in the middle. This student randomly tosses the ball to anyone in the circle. When the person in the circle catches the ball, he/she calls out a word in the category. The ball is then thrown back to the student in the center who generates another word and throws the ball to a new person in the circle. The student in the center generates every other response.

**Variation #4** - Paired association

**Vocab Master** - Three to five students create a sentence correctly using the given vocabulary word. The sentence is formed by each student contributing one word at a time.

**Math All Around** - This is a timed activity with teams of five students. Each team is given 5 basic math facts. They must state the problem and its answer, with each student only offering one word of the problem. Student 5 always gives the answer. As soon as the answer is given, Student 5 runs down and becomes Student 1. In this way, all students will give one of the answers. If the answer is incorrect, another team member may call “time out”. The team huddles and the correct answer is given to the person who gave the incorrect number. The team must then restate the problem correctly. Each team is timed as to how long it takes to



generate five problems, including the time outs. The team with the lowest time wins.

An open-ended variation of this activity is for the team members to start with a given value and create five different number sentences that have the given value as the answer. One-variable equation can also be solved using the 5-member team format.

**Expert Game** - two or more participants - Two students assume the role of experts and speak to the audience by alternating one word at a time between them. They are experts in a field chosen by the audience or teacher. The students then answer questions in that field posed by the audience, speaking alternately one word at a time.

**Find the Fib.** This is a nice alternative to help students test their knowledge about any given topic. Students write three statements: three that are true and one that is false, but plausible. They then share their statements, challenging others to decide which is the false item. Students can also use cards with FIB written on them. They hold these up when they hear the inaccurate statements. This allows the teacher to see by means of a signal who understands and who does not.

**Show Don't Tell.** A list of vocabulary words from a current unit or piece of literature under study is displayed on the LCD projector or board. The class is divided into partner teams of two. Each team is given one of the vocabulary words from the displayed list. The team's job is to decide how to convey the meaning of the given word to the rest of the class by only using body and hand motions or acting out the word. This activity is similar to charades. The teams cannot make any sounds or use any props to convey the word's meaning. The class must decide which word from the list on the board they are seeing explained.